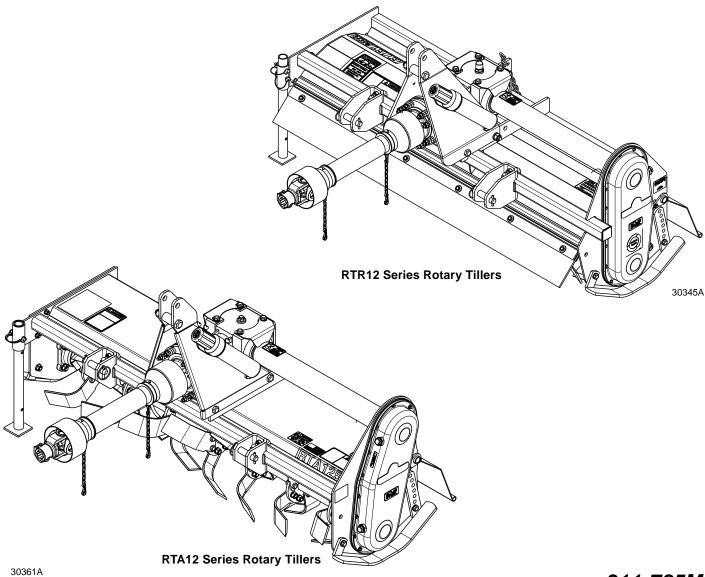
Rotary Tillers

RTR12 & RTA12 Series (Serial No. 884764-)

RTR1242, RTR1250, RTR1258, RTR1266, & RTR1274 RTA1242, RTA1250, RTA1258, RTA1266, & RTA1274



311-785M Operator's Manual





Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover photo may show optional equipment not supplied with standard unit.

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inted 8/12/14



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Printed in the United States of America.



These are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Thoroughly read and understand the instructions given in this manual before operation. Refer to the "Safety Label" section, read all instructions noted on them.

Do not allow anyone to operate this equipment who has not fully read and comprehended this manual and who has not been properly trained in the safe operation of the equipment.

- ▲ Operator should be familiar with all functions of the unit.
- ▲ Operate implement from the driver's seat only.
- Make sure all guards and shields are in place and secured before operating implement.
- ▲ Do not leave tractor or implement unattended with engine running.
- ▲ Dismounting from a moving tractor could cause serious injury or death.
- ▲ Do not allow anyone to stand between tractor and implement while backing up to implement.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ Wear snug fitting clothing to avoid entanglement with moving parts.
- ▲ Watch out for wires, trees, etc., when raising implement. Make sure all persons are clear of working area.
- ▲ Turning tractor too tight may cause implement to ride up on wheels. This could result in injury or equipment damage.
- ▲ Do not carry passengers on implement at any time.





Look For The Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

Be Aware of Signal Words

A Signal word designates a degree or level of hazard seriousness. The signal words are:

A DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

A WARNING

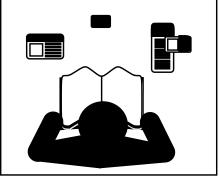
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

A CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

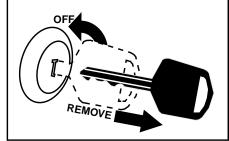
For Your Protection

▲ Thoroughly read and understand the "Safety Label" section, read all instructions noted on them.



Shutdown and Storage

- ▲ Lower machine to ground, put tractor in park, turn off engine, and remove the key.
- ▲ Detach and store implements in an area where children normally do not play. Secure implement by using blocks and supports.





Parts Manual QR Locator

The QR (Quick Reference) code on the front cover and to the left will take you to the Parts Manual for this equipment. Download the appropriate App on your camera phone, open the App, point your phone on the QR code and take a picture.



Dealer QR Locator

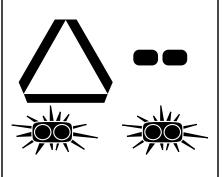
The QR code on the left will link you to available dealers for Land Pride products. Refer to Parts Manual QR Locator on this page for detailed instructions.



These are common practices that may or may not be applicable to the products described in this manual.

Use Safety Lights and Devices

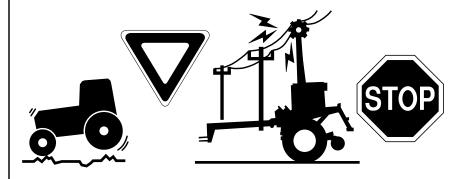
- ▲ Slow moving tractors, selfpropelled equipment, and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
- Flashing warning lights and turn signals are recommended whenever driving on public roads.



Transport Machinery Safely

- ▲ Comply with state and local laws.
- ▲ Maximum transport speed for implement is 20 mph. DO NOT EXCEED. Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrain require a slower speed.
- ▲ Sudden braking can cause a towed load to swerve and upset. Reduce speed if towed load is not equipped with brakes.

- ▲ Use the following maximum speed - tow load weight ratios as a guideline:
 - **20 mph** when weight is less than or equal to the weight of tractor.
 - **10 mph** when weight is more than weight of tractor but less than double the weight of tractor.
- ▲ IMPORTANT: Do not tow a load that is more than double the weight of tractor.



Practice Safe Maintenance

- ▲ Understand procedure before doing work. Use proper tools and equipment, refer to Operator's Manual for additional information.
- ▲ Work in a clean dry area.
- ▲ Lower the implement to the ground, put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Allow implement to cool completely.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ Inspect all parts. Make sure parts are in good condition & installed properly.
- ▲ Remove buildup of grease, oil or debris.
- Remove all tools and unused parts from implement before operation.



Operate Equipment Safely

- ▲ The operator must not use drugs or alcohol as they can change the alertness or coordination of that person while operating the equipment. The operator should, if he is taking over-the-counter drugs, seek medical advice on whether he can safely operate the equipment.
- ★ Keep bystanders away. Start tractor with gearshift in park or neutral and park brakes set. Be aware hydraulics are live upon start-up and can move instantly.
- ▲ Dig Safe, Call 811.

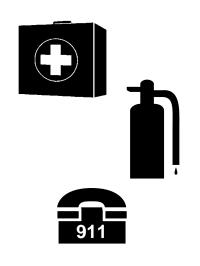
 Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any under ground services in the area. Be sure to ask how close you can work to the marks they positioned.
- Avoid contact with any over head utility lines or electrically charged conductors.



These are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital, and fire department near phone.



Wear Protective Equipment

- Wear protective clothing and equipment appropriate for the job. Avoid loose fitting clothing.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- Operating equipment safely requires the full attention of the operator. Avoid wearing radio headphones while operating machinery.



Avoid High Pressure Fluids Hazard

- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic lines or performing work on the system.
- ▲ Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ DO NOT DELAY. If an accident occurs, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin or eyes must be treated within a few hours or gangrene may result.

Keep Riders Off Machinery

- ▲ Riders obstruct the operator's view, they could be struck by foreign objects or thrown from the machine.
- Never allow children to operate equipment.



Tire Safety

- ▲ Tire changing can be dangerous and should be preformed by trained personnel using the correct tools and equipment.
- ▲ When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- When removing and installing wheels, use wheel handling equipment adequate for the weight involved.



Handle Chemicals Properly

- Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- ▲ Follow instructions on container label
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire is a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.

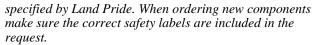




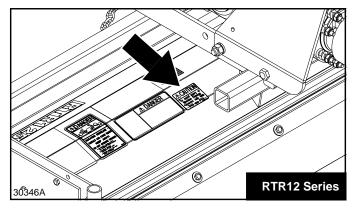
Safety Labels

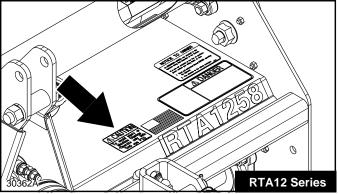
Your Rotary Tiller comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

- 1. Keep all safety labels clean and legible.
- 2. Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Land Pride dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.
- 3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as



- 4. Refer to this section for proper label placement. To install new labels:
 - a. Clean the area the label is to be placed.
 - b. Spray soapy water on the surface where the label is to be placed.
 - c. Peel backing from label. Press firmly onto the surface.
 - d. Squeeze out air bubbles with the edge of a credit card or with a similar type straight edge.

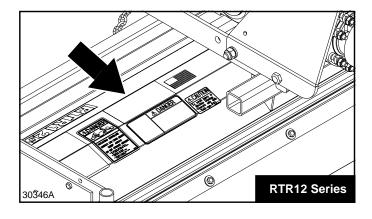






818-130C

Operate only w/540 rpm PTO

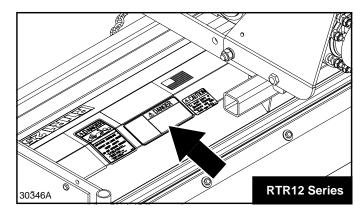


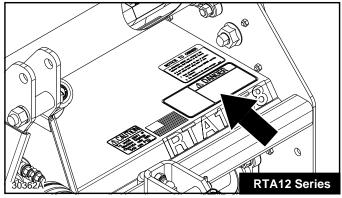


818-284CRTR12 Series only
Thrown Object hazard

Important Safety Information

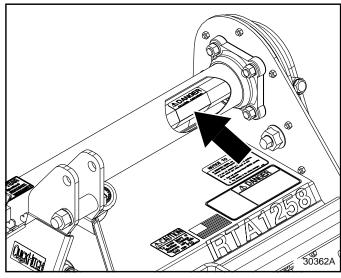








818-171CRotating Tines Hazard!



RTA1258 Shown (Applicable for both RTA & RTR Series)

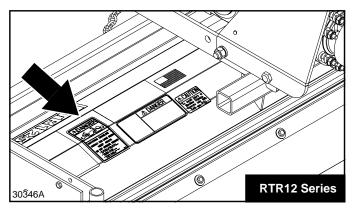


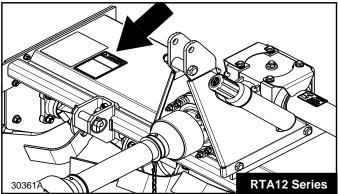
818-543C

RTR & RTA Series

Rotating Driveline Hazard - Keep Away!









ROTATING DRIVELINE CONTACT CAN CAUSE DEATH KEEP AWAY!

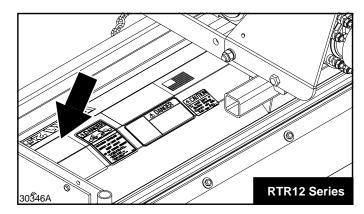
DO NOT OPERATE WITHOUT -

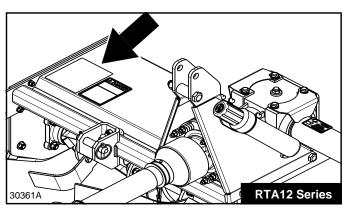
- All driveline guards, tractor and equipment shields in place
- Drivelines securely attached at both ends.
- Driveline guards that turn freely on Driveline 818-

818-5520

818-552C

Rotating Driveline Hazard - Keep Away!







- To prevent serious injury or death:
- Read and understand Operator's Manual before using. Review annually.
- * Do not permit riders on the tractor or implement. Never carry children on tractor seat.
- * Do not allow children to operate implement.
- Operate only with guards installed and in good condition.
- * Keep away from moving parts.
- Operate only with tractor equipped with ROPS and seatbelts.
- Before operating, clear debris from working area.
- * Do not operate in the raised position.
- * Stop engine, set brake and wait for all moving parts to stop before dismounting.
- * Support implement securely before working beneath unit.
- Transport with clean reflectors, SMV and working lights as required by federal, state, and local laws.
- * Stand clear when implement is in operation.

Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad.

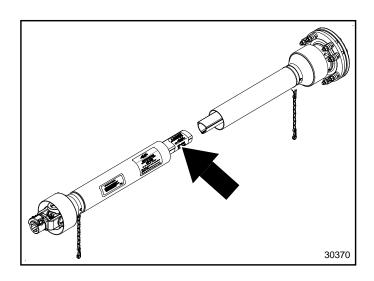
818-858C REV.B

818-858C

General Safety Instructions

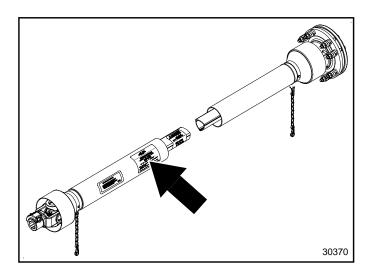
Important Safety Information







818-540CRTR & RTA Series
Shield missing - Do Not operate.





818-552C
RTR & RTA Series
Rotating Driveline Hazard Keep Away!



Land Pride welcomes you to the growing family of new product owners.

This Rotary Tiller has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this machine.

Application

The RTR12 and RTA12 Series Rotary Tillers are designed and built by Land Pride to till soil for seedbed and planting preparation with uses and applications in landscaping, gardens, and residential areas. They are adapted for 15-50 horsepower tractors with Category I three-point hitch mounting, 540 rpm PTO speed and are Quick-Hitch adaptable.

The reverse rotation tillers (RTR Series) tend to achieve greater depth penetration resulting in moving and pulverizing more soil. Also, they bury more of the residue in the soil.

See "Specifications & Capacities" on page 28 and "Features & Benefits" on page 30 for additional information.

Using This Manual

- This Operator's Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator's or Parts Manual, contact your authorized dealer. Manuals can also be downloaded, free-of-charge, from our website at www.landpride.com

Terminology

"Right" or "Left" as used in this manual is determined by facing the direction the machine will operate while in use unless otherwise stated.

Definitions

IMPORTANT: A special point of information related to the following topic. Land Pride's intention is this information must be read & noted before continuing.

NOTE: A special point of information that the operator should be aware of before continuing.

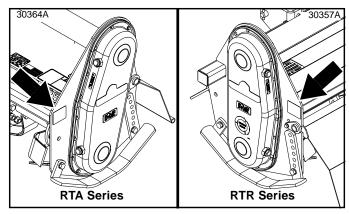
Owner Assistance

The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service. The parts on your Rotary Tiller have been specially designed by Land Pride and should only be replaced with genuine Land Pride parts. Contact a Land Pride dealer if customer service or repair parts are required. Your Land Pride dealer has trained personnel, repair parts, and equipment needed to service the implement.

Serial Number

Model No. Serial No.

For quick reference and prompt service, record model number and serial number in the spaces provided above and again on warranty page 33. Always provide model and serial number when ordering parts and in all correspondences with your Land Pride dealer. Refer to Figure 1 for location of your serial number plate.



Serial Number Plate Location Figure 1

Further Assistance

Your dealer wants you to be satisfied with your Rotary Tiller. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

- Discuss the matter with your dealership service manager making sure that person is aware of any problems you may have and has had the opportunity to assist you.
- 2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the problem, and request assistance.
- 3. For further assistance write to:

Land Pride

Service Department

P.O. Box 5060 Salina, Ks. 67402-5060

E-mail address lpservicedept@landpride.com

Section 1: Assembly and Set-Up



Dealer Preparations



CAUTION

To avoid bodily injury caused by accidental falling of tiller, securely support tiller on safe supporting stands or blocks.

This unit is shipped almost completely assembled. Carefully follow instructions for final assembly.

Before attempting assembly check the following items. Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

- Check for fasteners and pins that were shipped with the tiller. Small hardware shipped loose from the factory is contained in a bag. Larger parts are attached to the shipping crate.
- Have ready for the assembly task a fork lift or loader along with chains and safety stands sized for the job.
- Have a minimum of 2 people on hand during assembly.

Tractor Requirements

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used.

Hitch Category	.3-Point Cat. I
PTO Speed	540 RPM
Horsepower Requirements:	
42" & 50" widths	15-35 HP
58" & 66" widths	20-40 HP
74" Width	25-50 HP



WARNING

Ballast weights may be required to maintain steering control. Refer to your tractor Operator's Manual to determine proper ballast requirements.

Torque Requirements

Check to make sure all nuts are tightened. Refer to "Torque Values Chart" on page 32 to determine correct torque values for common bolts. See "Additional Torque Values" at bottom of chart for exceptions to standard torque values.

RTR & RTA Parking Stand Installation

Refer to Figure 1-1:



CAUTION

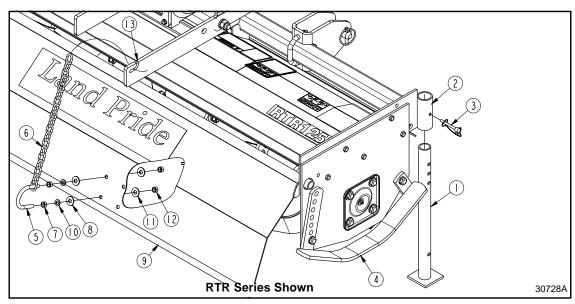
To avoid bodily injury caused by accidental falling of tiller, stabilize unit with parking stand and support blocks.

- Insert parking stand (#1) in support tube (#2).
- 2. Adjust parking stand to a height that will support the tiller level while resting on skid shoes (#4).
- Secure parking stand with wire retaining pin (#3).
 Make sure wire retainer is hooked over the end of the retaining pin.

RTR & RTA Rear Chain Installation

Refer to Figure 1-1:

- 1. Insert u-bolt (#5) into one end of rear chain (#6).
- 2. Install two nuts (#7) onto u-bolt an equal distance from the threaded end.
- 3. Insert u-bolt through lock washers (#10), flat washers (#8), and holes in deflector shield (#9) that are most vertically located under slot (#13).
- 4. Secure u-bolt (#5) to deflector shield (#9) with flat washers (#11) and 3/8"-16 hex nuts (#12). Draw hex nuts (#12) up snug and tighten hex nuts (#10) to the correct torque.
- 5. Attach opposite end of rear chain (#6) to slot (#13).



Support Leg & Rear Deflector Chain Assembly Figure 1-1



Reverse Rotation (RTR) Rotary Tillers

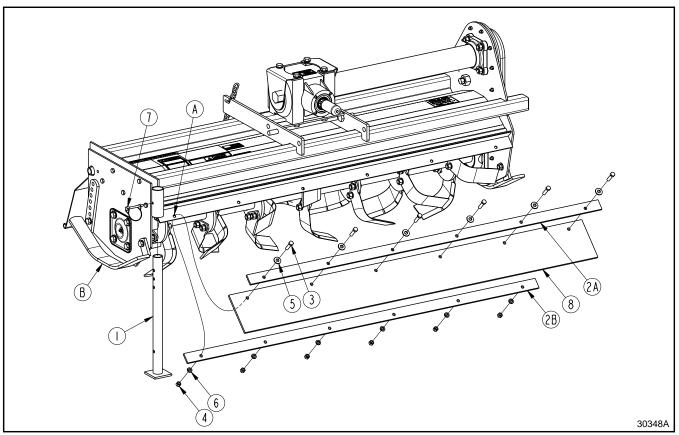
The following are assembly instructions for reverse rotation tillers (RTR12 Series). See page 12 for standard rotation tillers (RTA12 Series).

IMPORTANT: Parking stand (#1) and wire retaining pin (#7) must be installed at the correct height before continuing. See "Parking Stand Installation" on page 9 for special instructions.

RTR Front Deflector Assembly

Refer to Figure 1-2:

- 1. Remove 3/8"-16 x 1 1/2" bolts (#3), flat washers (#5), lockwashers (#6), hex nuts (#4) and both front deflector mounting bars (#2) from tiller frame.
- 2. Insert 3/8"-16 x 1 1/2" GR5 hex head bolts (#3) through flat washers (#5), upper mount bar (#2A), front rubber deflector (#8) and mounting holes "A".
- 3. Secure rubber deflector and upper mounting bar with lower mount bar (#2B), lock washers (#6) and hex nuts (#7).
- 4. Tighten hex nuts to the correct torque.



RTR Parking Stand and Front Deflector Assembly Figure 1-2



RTR 3-Point Hitch Assembly

Refer to Figure 1-3:

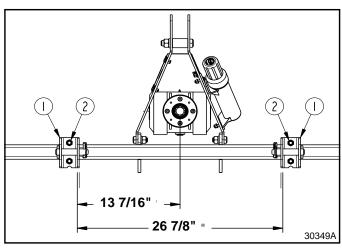
- Install upper right-hand hitch plate (#4) to gearbox mounting frame with 5/8"-11 x 1 3/4" GR5 cap screw (#6), lockwashers (#14), and hex nuts (#9). Do not tighten hardware at this time.
- 2. Repeat step 1 above to Install upper left-hand hitch plate (#3) to gearbox mounting frame.
- 3. Install 1 1/4" OD spacer (#1) between upper 3-Point hitch plates (#4 & #5) with 3/4"-10 x 4" GR5 cap screw (#7), lockwasher (#15) and hex nut (#10).
- 4. Tighten all hex nuts (#9 & #10) to the correct torque.
- 5. Attach manual storage tube (#18) to hitch plate (#3) with 1/4"-20 x 1 1/4" GR5 cap screws (#8), flat washers (#13) and nylock hex nuts (#12) as shown. Tighten nuts to the correct torque.
- 6. Attach left-hand clevis (#5) to the square tube with 1/2" u-bolt (#17) and 1/2" hex lock nuts (#11). **Do Not Tighten** lock nuts.
- 7. Repeat step 6 above for the right-hand clevis.

Refer to Figure 1-4:

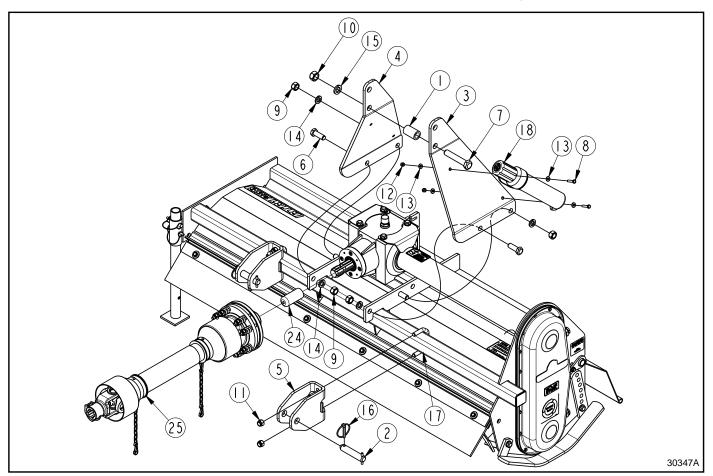
 Position clevises 26 7/8" apart from inside of clevis plate to inside of clevis plate and centered off the gearbox input shaft 13 7/16" as shown.

Refer to Figure 1-3:

- 9. Tighten u-bolt locknuts (#11) to the correct torque.
- 10. Skip to "Tractor Hook-Up" instructions on page 13.



Clevis Location (RTR Series Shown) Figure 1-4



RTR 3-Point Hitch & Driveline Assembly Figure 1-3



Standard Rotation (RTA) Rotary Tillers

The following are assembly instructions for standard rotation tillers (RTA12 Series). See page 10 for reverse rotation tillers (RTR12 Series).

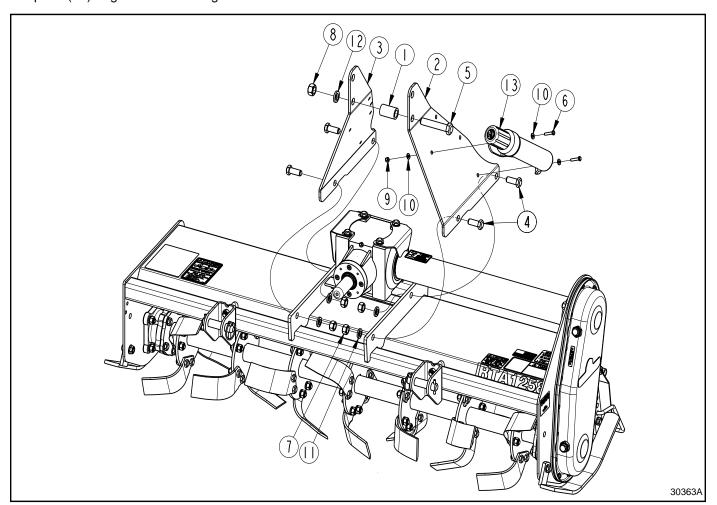
IMPORTANT: Parking stand (#3) and wire retaining pin (#20) must be installed at the correct height before continuing. See "Parking Stand Installation" on page 9 for special instructions.

RTA 3-Point Hitch Assembly

Refer to Figure 1-5:

- 1. Install upper right-hand hitch plate (#6) to gearbox mounting frame with 5/8"-11 x 1 3/4" GR5 cap screws (#9), spring lockwashers (#17), and hex nuts (#12). **Do not tighten** hardware at this time.
- 2. Repeat step 1 to Install upper left-hand hitch plate (#5) to gearbox mounting frame.

- 3. Install 1 1/4" OD spacer (#1) between upper 3-Point hitch plates (#5 & #6) with 3/4"-10 x 4" GR5 cap screw (#10), lockwasher (#18) and hex nut (#13).
- 4. Tighten all hex nuts (#12 & #13) to the correct torque.
- 5. Attach manual storage tube (#22) to hitch plate (#5) with 1/4"-20 x 1 1/4" GR5 cap screws (#11), flat washers (#116) and nylock hex nuts (#15) as shown. Tighten nuts to the correct torque.
- 6. Install driveline guard (#7) on backside of 3-Point hitch plates with four 5/16" wing screws (#8).
- Attach left-hand clevis (#4) to the square tube with 1/2" u-bolt (#21) and 1/2" hex lock nuts (#14). Make certain clevis is oriented with hitch pin holes closest to the top and the longer chamfer is on the bottom. **Do Not Tighten** lock nuts.
- 8. Repeat step 7 above for the right-hand clevis.



RTA Parking Stand, 3-Point Hitch & Driveline Assembly Figure 1-5

Section 1: Assembly and Set-Up

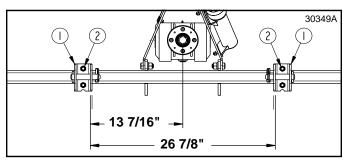


Refer to Figure 1-6:

Position clevises 26 7/8" apart from inside of clevis plate to inside of clevis plate and centered off the gearbox input shaft 13 7/16" as shown.

Refer to Figure 1-5 on page 12:

10. Tighten u-bolt locknuts (#15) to the correct torque.



Clevis Location (RTA Series Shown) Figure 1-6

Tractor Hook-Up



DANGER

A Crushing Hazard exists when hooking-up equipment to a tractor. Do not allow anyone to stand between tractor and implement while backing-up to implement. Do not operate hydraulic 3-point lift controls while someone is directly behind the tractor or near the implement.



WARNING

Lifting unit more than 14" above ground with PTO engaged or engaging PTO with unit higher than 14" above ground can break the driveline and could cause flying projectiles.



CAUTION

To avoid bodily injury caused by accidental falling of tiller, stabilize unit with parking stand and support blocks.

Refer to Figure 1-7:

Back tractor up to tiller until lower 3-Point lift arms are aligned with tiller hitch clevises.

- 2. Secure tractor's 3-Point lower hitch arms to the lower hitch clevises using 7/8" diameter hitch pins. Secure hitch pins with linch pins.
- 3. Secure tractor's top center link to tiller hitch plates using 3/4" diameter hitch pin (supplied by customer).
- Place a level on the end plate and adjust tractor's top center link to level tiller from front to back.
- Place level on the square tube and adjust one of the two tractor's lower 3-Point arms up or down to level tiller from left to right.

IMPORTANT: To keep parking stand from becoming damaged, always store stand in the transport position before moving tractor with tiller attached.

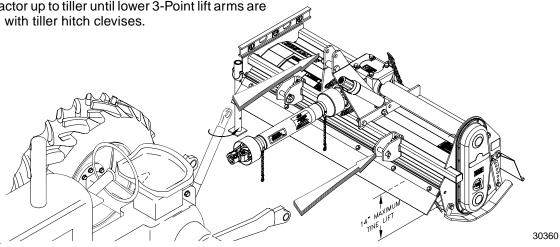
- Raise tiller up and remove parking stand from its mounting tube. Turn parking stand upside down and reinsert it several inches through the top of the mounting tube. Secure parking stand using one of the upper three holes with existing wire retaining pin.
- Raise tiller fully up with 3-Point lift. Measure the distance tines are off the ground. If distance exceeds 14", adjust tractor's 3-Point lift height limiter until tines will not lift higher than 14 inches off the ground.
- 8. Continue with "Driveline Installation" on page 13.

Driveline Installation

The tiller driveline is coupled to the tractor shaft with a push-pin coupler and to the implement shaft with a bolted coupler. A slip clutch is provided on the implement end for protection from shock loads.

Always engage PTO at low engine rpm to minimize start-up torque. Drivelines with friction slip clutches must go through a "run-in" operation prior to initial use and after long periods of inactivity. See "Driveline Protection" on page 22 for detailed instructions on maintaining the slip clutch.

If the Rotary Tiller is used on more than one tractor, an additional driveline may be required - especially if a quick hitch is used.



Tractor Hook-Up Figure 1-7





DANGER

Do not engage tractor PTO while hooking-up and unhooking driveline or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline resulting in serious injury or death.



WARNING

Do not use a PTO adaptor with a quick hitch. A PTO adapter will increase strain on the tractor's PTO shaft resulting in possible damage to shaft and driveline.



DANGER

All guards and shields must be installed and in good working condition at all times during tiller operation.



WARNING

Always disengage PTO, put gear selector in park or set park brake, shut off tractor, remove ignition key, and wait for all moving parts to come to a complete stop before dismounting tractor.



WARNING

Do not over speed PTO or machine breakage may result. Some tractors are equipped with multispeed PTO ranges. Be certain your tractor's PTO is set for 540 rpm.

IMPORTANT: The driveline must be lubricated before putting it into service. Refer to "**Lubrication Points**" on page 25 for detailed instructions.

IMPORTANT: Drivelines with friction clutches must go through a "run-in" operation prior to initial use and after long periods of inactivity. See "**Driveline Protection**" on page 22 for detailed instructions.

IMPORTANT: If tiller is to be used on more than one tractor, an additional driveline may be required, especially if a quick hitch is used.

IMPORTANT: The tractor's PTO shaft and tiller gearbox shaft must be aligned and level with each other during installation of driveline. This alignment is the shortest distance between the two shafts.

- Park tractor and tiller on a level surface. Raise tiller to align gearbox input shaft level with tractor PTO shaft. Securely block tiller at this height to keep unit from lowering while attaching the driveline.
- 2. Place gear selector in park, shut tractor engine off, set park brake and remove switch key.

Refer to Figure 1-3 on page 11 for RTA12 or Figure 1-5 on page 12 for RTR12

 Remove gearbox shaft protector (#24) from end of gearbox shaft and attach slip clutch end of driveline (#25) to gearbox input shaft.

- 4. Attach other end of driveline to tractor PTO shaft.
- Move driveline yokes back and forth to ensure both ends are secured to the shafts. Reattach any yoke that is loose.

NOTE: If driveline is too long to fit between tractor and tiller, skip to "**Shorten Driveline**" on page 15.

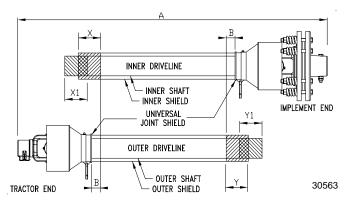
IMPORTANT: Two safety chains are supplied with the driveline. To keep driveline shields from rotating, these chains must be attached to the outer and inner driveline shields and to the tiller and tractor.

- Attach safety chain on the outer driveline shield to the tractor frame to restrict outer shield from rotating. Re-latch safety chain to outer driveline shield.
- Attach safety chain on the inner driveline shield to the tiller frame to restrict inner shield from rotating. Re-latch safety chain to inner driveline shield.

Check Driveline Collapsible Length Refer to Figure 1-8:

IMPORTANT: A driveline that is too long can bottom out causing structural damage to tractor and tiller. Always check driveline collapsed length during initial setup, when connecting to a different tractor, and when alternating between using a quick hitch and a standard 3-point hitch. More than one driveline may be required to fit all applications.

- Make sure driveline is installed properly before checking driveline collapsed length (Refer to "Driveline Installation" instructions on page 13).
- 2. With driveline level, measure 1" ("B" dimension) back from universal joint shield to end of outer driveline shield as shown in Figure 1-8.
 - a. If measurement is less than 1", shorten driveline.
 - a. If measurement is 1" or more, skip to "Check Driveline Maximum Length" on page 15.



Driveline Shortening Figure 1-8

Section 1: Assembly and Set-Up



Shorten Driveline

Refer to Figure 1-8 on page 14:

Be sure to first check driveline collapsed length as instructed above. If required, shorten driveline as follows:

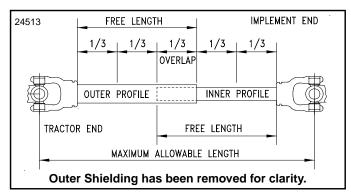
- Un-hook driveline from tractor PTO shaft and pull outer and inner drivelines apart.
- Reattach outer driveline to tractor PTO shaft. Pull on inner and outer drivelines to be sure universal joints are properly secured.
- 3. Hold inner and outer drivelines parallel to each other:
 - a. Measure 1" ("**B**" dimension) back from outer driveline universal joint shield and make a mark at this location on the inner driveline shield.
 - b. Measure 1" ("**B**" dimension) back from the inner driveline universal joint shield and make a mark at this location on the outer driveline shield.
- 4. Remove driveline and safety chains from tractor and gearbox.
- Measure from end of inner shield to scribed mark ("X" dimension). Cut off inner shield at the mark. Cut same amount off the inner shaft ("X1" dimension).
- Measure from end of outer shield to scribed mark ("Y" dimension). Cut off outer shield at the mark. Cut same amount off the outer shaft ("Y1" dimension).
- 7. Remove all burrs and cuttings.
- 8. Continue with "Check Driveline Maximum Length".

Check Driveline Maximum Length Refer to Figure 1-9:

The driveline maximum allowable length must, when fully extended, have a minimum overlap of the profile tubes by not less than 1/3 the free length with both inner and outer profile tubes being of equal length.

- 1. If not already completed, apply multi-purpose grease to inside of outer profile and reassemble driveline.
- 2. Assemble the two driveline profiles together with just 1/3 overlapping of the profile tubes as shown below. Once assembled, measure and record the maximum allowable length for future reference.

Record Maximum Allowable Length here:



Driveline Maximum Length Figure 1-9

- Reattach driveline to tractor and gearbox shaft following "Driveline Installation" steps 1 to 7 on page 14.
- 4. Continue with "Check Driveline Interference".

Check Driveline Interference

- 1. Start tractor and raise Rotary Tiller just enough to remove support blocks from under tiller.
- Slowly engage tractor hydraulic 3-Point control lever to lower tiller while checking for sufficient drawbar clearance. Move drawbar ahead, aside or remove if required.

Refer to Figure 1-10:



WARNING

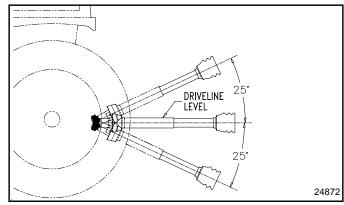
Lifting unit more than 14" above ground with PTO engaged or engaging PTO with unit higher than 14" above ground can break the driveline and could cause flying projectiles.



WARNING

The driveline must not exceed an angle of 25 degrees up or down while operating. Exceeding this angle with driveline rotating can break the driveline and cause flying projectiles.

- With PTO off, raise implement fully up and make the following checks below. If driveline exceeds any of the limits listed, set tractor 3-Point lift limiter at a height that will keep the driveline within its lift limits to avoid premature driveline breakdown.
 - Tines do not exceed more than 14" off the ground.
 - Driveline does not exceed 25° up.
 - Driveline does not exceed maximum allowable length recorded in step 2 under "Check Driveline Maximum Length" on this page.



Maximum PTO Driveline Movement During Operation Figure 1-10



Operating Checklist

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, maintenance, and storage of the Rotary Tiller. Therefore, it is absolutely essential that no one operates the Rotary Tiller without first having read, fully understood, and become totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

- Important Safety Information, pages 1 to 7
- Section 1: Assembly and Set-Up, page 9
- Section 2: Operating, page 16
- Section 3: Adjustments, page 20
- Section 4: Maintenance and Lubrication, page 22

Inspections

Make the following inspections with tiller attached to a tractor, PTO disengaged and completely stopped.

Operating Checklist

~	Check	Page No.	
	Inspect tractor safety equipment to make sure it is in good working condition.	See Tractor Manual	
	Check all guards and shields to make certain they are in working condition, in place and secured.	good	
	Carefully raise and lower implement to ensure drawbar, other tractor parts do not contact tiller frame or PTO driv		
	Check driveline to be sure it is securely connected to tractor PTO shaft and tiller gearbox shaft. Refer to "Driveline Installation".	Page 13	
	Check drive chain tension. Refer to "Drive Chain Tension".	Page 20	
	Check tiller depth setting. Refer to "Skid Shoe Adjustment".	Page 21	
	Check driveline slip clutch to make sure disks will slip. Refer to "Driveline Protection"	Page 22	
	Check for worn, bent, broken, loose and/or missing tines. Replace tines as needed. Refer to "Tine Replacement"	Page 22	
	Grease driveline shaft and all other grease fittings Refer to "Lubrication Points".	Page 25	
	Check oil level in gearbox. Make sure all plugs have been replaced when completed. Refer to "Gearbox Lubrication".	Page 26	
	Check oil level in chaincase. Make sure all plugs have been replaced when completed. Refer to "Chaincase Lubrication".	Page 26	
	Check tiller initially and periodically for loose bolts and pins. Refer to "Torque Values Chart for Common Bolt Sizes" for torque values.	Page 32	

Safety Information



DANGER

Do not engage tractor PTO while hooking-up and unhooking driveline or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline resulting in serious injury or death.



DANGER

Keep yourself and all others away from rotating tines and drive train. Always disengage PTO and lockout power source before making adjustments or servicing the tiller. A person's body, hair, or clothing can become entangled in rotating components causing serious bodily injury or death.



DANGER

Keep away from the rotating hex drive shaft between the gearbox and chaincase. A person can become entangled in the shaft causing serious bodily injury or death.



DANGER

Make all 3-point hydraulic adjustments from the tractor seat. Never make hydraulic adjustments while standing alongside the tractor or behind the tractor.



DANGER

PTO shaft shield, gearbox shields, driveline shields, and driveline safety chains must be installed and in good working condition while operating tiller to avoid injury or death from entanglement in a rotating driveline.



DANGER

Do not operate a broken or bent driveline. Such drivelines can break apart while rotating at high speeds causing serious injury or death. Always remove Rotary Tiller from service until damaged drivelines are repaired or replaced.



DANGER

Clear area of debris before tilling. Mark any potential hazards that cannot be removed such as tree stumps, post, rocks, holes, and drop-offs with a visible flag.



DANGER

Keep front rubber dirt deflector on the RTR tiller in place while operating the unit. Objects can be thrown forward toward the operator causing serious bodily injury or death.



DANGER

Do not point outlet toward people, animals, or buildings and keep people and animals away from outlet during operation. Tine impact on objects can cause projectiles resulting in bodily injury or death.

Section 2: Operating





DANGER

Do not till across steep inclines exceeding 15 degrees. The action of the tines being forced down into the ground can cause the tractor to roll-over resulting in serious injury or death. Consult your tractor's manual for acceptable inclines the tractor is capable of traveling across.



DANGER

Always disengage PTO before lifting tiller up and never operate tiller in the raised position. The tiller can discharge objects at high speeds resulting in injury or death.



DANGER

Do not use tiller as a working platform. The tiller is not properly designed or guarded for this use. Using tiller as a working platform can cause serious injury or death.



WARNING

Never allow children or other riders on the tractor or tiller. They can fall and be ran over causing serious injury or death.



WARNING

Do not use a PTO adaptor with a quick hitch. A PTO adapter will increase strain on the tractor's PTO shaft resulting in possible damage to shaft and driveline.



WARNING

Use Rotary Tiller for its intended purpose only. Do not use tiller to lift or carry objects; to pull fence posts, stumps, or other objects; or to tow other equipment. Doing so can damage the tiller, cause serious bodily injury, or death.



WARNING

Always disengage PTO, put gear selector in park or set park brake, shut off tractor, remove ignition key, and wait for all moving parts to come to a complete stop before dismounting tractor.



WARNING

Always make certain driveline yokes are secured to the tractor PTO shaft and gearbox input shaft before engaging PTO. A loose driveline can slip off the end of a connected shaft while rotating and cause serious bodily injury or death.



WARNING

Do not allow anyone to operate this Rotary Tiller who has not been properly trained in its safe operation or anyone who is under the age of 16.



WARNING

Do not operate tiller with loose pins, bolts and nuts. Loose hardware can result in a serious breakdown causing bodily injury or death.



WARNING

Do not over speed PTO or machine breakage may result. Some tractors are equipped with multispeed PTO ranges. Be certain your tractor's PTO is set for the tiller's rated PTO speed. See Specifications & Capacities for rated PTO speed.



CAUTION

Make certain you are not working over any underground wiring, pipes, or other obstructions. If there is doubt, contact your local utility services so that they may mark the location of all underground utilities in the area. Be sure to ask how close you can work to the marks or flags they positioned.

IMPORTANT: Make sure all safety labels are in their proper location and in good condition before operation. Follow all directions on the safety labels.

IMPORTANT: Do not alter tiller in a way which will adversely affect its performance or reliability or use the tiller for a purpose for which it was not designed.

NOTE: To protect the parking stand from becoming bent while transporting and tilling the soil, always store it upside down in its mount.



Transporting

Refer to Figure 2-1:



CAUTION

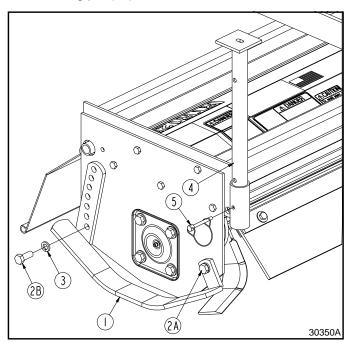
When traveling on public roads whether at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. Comply with all federal, state, and local laws.

IMPORTANT: Always disengage PTO before raising tiller to transport position.

 When raising tiller to transport position, be sure the driveline does not contact tractor or tiller. Adjust tractor's 3-Point hitch lift height so that the tiller tines are not lifted more than 14 inches off the ground to prevent driveline damage.

Refer to Figure 2-1:

2. Remove parking stand (#4) from support tube, turn stand upsidedown and replace through top of support tube as shown. Secure stand with wire retaining pin (#5).



Parking Stand in Transport Position Figure 2-1

- Be sure to reduce tractor ground speed when turning, and leave enough clearance so tiller does not contact obstacles such as buildings, trees or fences.
- 4. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
- 5. When traveling over rough or hilly terrain, shift tractor to a lower gear.

Parking

The following steps should be taken when preparing to store the tiller or unhitch it from the tractor.

IMPORTANT: It is important to adjust skid shoes down to stabilize the tiller when parked.

Refer to Figure 2-2:

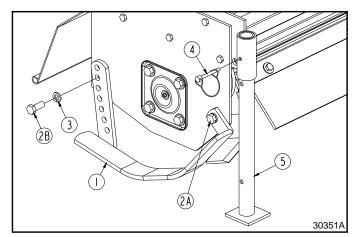
- 1. Adjust right-hand skid shoes (#1) down before unhitching tiller from the tractor:
 - a. Loosening pivot bolt (#2A) at the shoe's front.
 - b. Remove adjusting bolt (#2B) at the shoe's rear.
 - c. Pivot skid shoe down and replace pivot bolt (#2B) and lock washer (#3) in the second hole down from the top as shown.
 - d. Tighten bolts (#2A & #2B) to the correct torque.
- 2. Repeat step 1 to adjust the left-hand skid shoe down.
- 3. Remove parking stand (#5) from support tube, turn stand upright and replace it through bottom of support tube.
- Set parking stand (#5) to desired height for re-hookup and install wire retaining pin (#4) to lock in place.
- 5. Park tiller on a level, solid area. Shut tractor engine off and engage parking brake.
- 6. Unhitch tiller from tractor.



WARNING

Place support blocks under tiller as needed to prevent unit from tipping over onto a child and/or an adult. A tiller that tips over can result in injury or death.

- 7. After unhooking tiller, check tiller for stability by physically applying pressure at the hitch plates to see if it will tip forward or backwards. If the tiller moves in either direction, then block under the tiller as needed to prevent that movement.
- 8. See "Storage" on page 24 for additional information on long term storage of your tiller.



Parking Stand & Skid Shoe in Parking Position Figure 2-2

Section 2: Operating



General Operating Notes

Before beginning to till the following inspection should be performed:

- Check oil level in gearbox and chaincase. Refer to "Lubrication Points" on page 25.
- 2. Check that all plugs have been replaced properly in the gearbox and chaincase.
- 3. Be sure all tiller tines, bolts, and nuts are tight.
- 4. Be certain all guards, shields, and dirt deflectors are in place and secure.
- 5. Grease driveline shaft and all other grease fittings. Refer to "Lubrication Points" on page 25.
- Clear area to be tilled of rocks, branches, and other foreign objects.
- 7. Tall grass and weeds should be mowed before tilling.
- 8. Do not engage PTO at full throttle. Once engaged, increase throttle to 540 PTO speed. Tiller tines will cut better at 540 PTO speed than at reduced throttle.
- Tilling should not be done in wet conditions as soil will stick to tines.
- At first begin tilling at a slow forward speed and shift up as ground conditions warrant.
- 11. Operated tiller with deck level to the ground.
- 12. Tiller should be operated with the tiller deck level to the ground.
- Tiller tines will cut better when operating the tractor at full 540 rpm PTO speed than at reduced throttle.
- 14. After tilling the first 50 feet, stop and check to see that the tiller is adjusted properly.
- 15. Do not make turns or attempt to back up while tiller is in the ground. See important note below.

IMPORTANT: Turning or backing up with rotary tines in the ground will damage the tiller.

- Do not engage PTO with machine in the fully raised or lowered position.
- 17. Periodically check for foreign objects wrapped around the rotor shaft and remove them after disengaging PTO, turning off tractor engine, and removing ignition key.

General Operating Instructions

Before using your Land Pride RTR12 or RTA12 Series Rotary Tiller, you should have completely read the Operator's Manual, properly attached the tiller to the tractor, cut the driveline to proper length, run-in the clutch, and gone through the Operating Checklist. If you have missed any of these steps, please complete them before proceeding.

Now that you have properly prepared yourself and your tiller, it's time to do some tilling. Carefully drive the tractor to the site where you intend to till. You should have already cleaned this site of any large limbs, rocks, trash, metal or other debris. Best results will be achieved if you have mounted your tiller offset to the right far enough to cover the tread of your right tractor wheel. Line the tractor up just to the right of center on your tillage plot. You will be working from the center out and always turning to the right to line up for your next pass.

Lower the tiller half way to the ground and reduce your tractor engine speed to about one quarter throttle. Engage the PTO and gradually increase the engine speed until you reach full PTO speed of 540 rpm. Lower the tiller to the ground and simultaneously commence forward travel of approximately 2 mph. Do not make turns or attempt to back up while tiller is in the ground. See important note below.

IMPORTANT: Turning or backing up with rotary tines in the ground will damage the tiller.

Travel about 50 ft. and then stop to check your results. When stopping, remember to lift the tiller out of the ground, stop the tractor, reduce engine speed, disengage the PTO, set the park brake, shut off the tractor, and remove the keys. If you are tilling too shallow or too deep, adjust the skid shoes accordingly. If the soil texture is too coarse, lower the rear deflector and reduce your ground speed. If the soil texture is too fine, you will need to raise your rear deflector and increase your ground speed. For any other problem conditions that may arise, you will want to refer to the Troubleshooting section on page 27.

When you are done tilling for the day, make sure you use proper tractor shut down procedures before you get off of the tractor. If you are detaching your tiller, make sure you park it on a dry and level surface leaving it clean and ready for the next use. When you put your tiller up for the season, make sure you refer to the Storage Directions on page 24.

With a little practice and a few adjustments, you will soon be achieving the results you want with your Land Pride Rotary Tiller. See "Features and Benefits" Section 6 or "Specifications and Capacities" Section 5 for additional information and performance enhancing options.



RTA & RTR12 Tiller Hitch Offset

Refer to Figure 3-1:



CAUTION

Do not exceed offsetting tiller 7" left or right of gearbox input shaft. Doing so can break the driveline, tractor PTO, and tiller gearbox.



CAUTION

After offsetting, check to see that the driveline clears all shields on the tiller, tractor, and tiller hitch. If not, decrease offset until clearance is obtained.

Except for RTA1242, the RTA12 & RTR12 Series tillers can be shifted a maximum offset of 7" left or right of the gearbox input shaft by moving the hitch clevises (#1) 7" to the right or left.

The RTA1242 is built to be offset 5" to the right when the hitch clevis are set an equal distance away from the gearbox input shaft. The unit can be shifted a maximum of 7" to the left by moving the hitch clevis 7" to the right.

For best tillage results, adjust tiller offset to the right by moving the hitch clevis to the left far enough to cover the tractor's right rear wheel tread marks.

- Loosen hex nuts (#2) until clevises (#1) can be moved on the front tube.
- Slide lower hitch clevises (#1) an equal amount left or right up to 7" while holding the 26 7/8" distance between clevises.
- 3. Retighten hex nuts (#2) to the correct torque value.

Drive Chain Tension

The drive chain tension can be adjusted by rotating the chain tightener stud. Should excessive chain backlash occur, tighten stud as noted below.

RTR12 Series Tillers

Refer to Figure 3-2:

IMPORTANT: Jam nut has left-hand threads. Loosen nut by turning it clockwise.

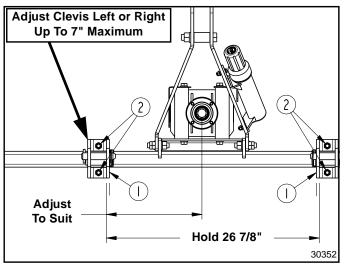
- Loosen jam nut and torque chain tightener stud counterclockwise 20 to 30 ft-lbs.
- 2. Retighten jam nut to 400 ft-lbs. Be sure to hold chain tightener stud in position while tightening jam nut.

RTA12 Series Tillers

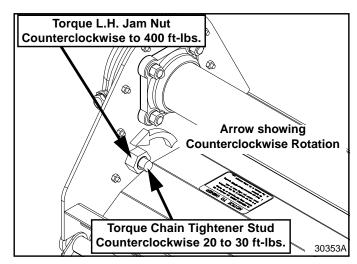
Refer to Figure 3-3:

IMPORTANT: Chain tightener nut has right-hand threads. Loosen nut by turning it counterclockwise.

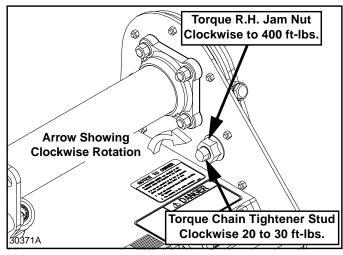
- Loosen jam nut and torque chain tightener stud clockwise 20 to 30 ft-lbs.
- 2. Retighten jam nut to 400 ft-lbs. Be sure to hold chain tightener stud in position while tightening jam nut.



Clevis Offset Figure 3-1



RTR12 Series Chain Tightener Figure 3-2



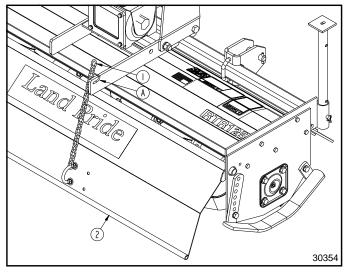
RTA12 Series Chain Tightener Figure 3-3



Rear Deflector

Refer to Figure 3-4:

Rear deflector (#2) can be adjusted closer to the ground to produce a fine soil texture or raised to produce a coarse soil texture. Adjust rear deflector up or down by repositioning chain (#1) in slot "A".



Rear Deflector Adjustment Figure 3-4

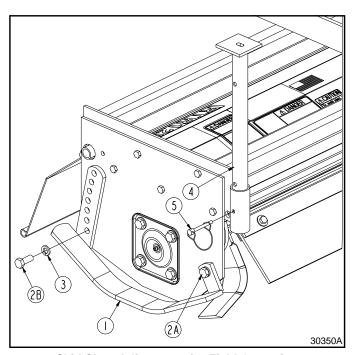
Skid Shoe Adjustment

Refer to Figure 3-5:

The skid shoes can be adjusted to the desired tilling depth by raising or lowering them:

NOTE: Tilling depth is the vertical distance from bottom of skid shoes to bottom of lowest tine. Be certain both skid shoes are adjusted the same.

- Raise tiller off the ground. Place support blocks under the tiller (not under the skid shoes) and lower tiller onto the supports. Make certain the tiller is secured while resting on the supports before working on or around the tiller.
- 2. Always place tractor in park, set tractor brakes, shut tractor engine off and remove switch key before dismounting tractor.
- 3. Loosen pivot bolt (#2A) at the shoe's front.
- 4. Remove adjusting bolt (#2B) at the shoe's rear.
- 5. Adjust skid shoe (#1) up or down to the desired tilling depth.
- 6. Reinstall adjusting bolt (#2B) and lock washer (#3). Tighten adjusting bolt and pivot bolt to the correct torque.



Skid Shoe Adjustment for Field Operation Figure 3-5



Maintenance

Proper servicing and adjustment is the key to the long life of any implement. With careful inspection and routine maintenance, you can avoid costly downtime and repair.

The parts on your Rotary Tiller have been specially designed and should only be replaced with genuine Land Pride parts. Do not alter the tiller in a way which will adversely affect its performance.

Check all bolts and pins after using the unit for several hours and on a regular basis thereafter to ensure they are tight and secured.

Replace worn, damaged or illegible safety labels by obtaining new labels from your Land Pride Dealer.



CAUTION

For safety reasons, each maintenance operation must be performed with tractor PTO disengaged, tiller lowered completely to the ground or onto support blocks, tractor engine shut off, and ignition key removed.

Tine Replacement

Refer to Figure 4-1 for RTR12 Series Tillers and Figure 4-2 for RTA12 Series Tillers:



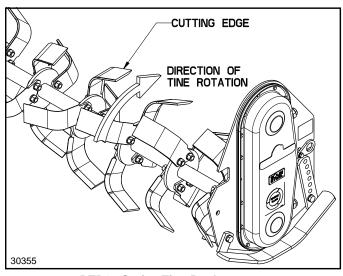
WARNING

Worn tines may be very sharp.

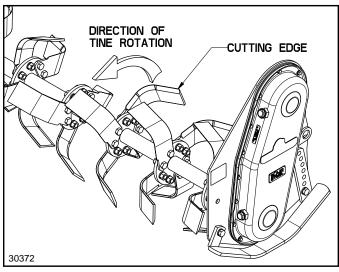
IMPORTANT: When ordering, be sure to order genuine Land Pride replacement tines only and to order both right- and left-hand tines. Always install tines with cutting edge facing direction of rotation.

IMPORTANT: Remove and install one tine at a time to ensure they are oriented correctly when installed.

- 1. Remove the 2 hex head cap screws and fasteners from the tine being replaced and then remove tine.
- Attach new tine to the mounting flange making certain it is positioned so that the cutting edge crosses over the mounting flange and leads in rotation as shown in Figure 4-1 for the RTR12 Series or in Figure 4-2 for the RTA12 Series.
- 3. Replace removed cap screws and nuts. Tighten nuts to the proper torque.
- 4. Repeat steps 1 to 3 until tines have been replaced.



RTR12 Series Tine Replacement Figure 4-1



RTA12 Series Tine Replacement Figure 4-2

Driveline Protection

Tiller drive components are protected from shock loads with a two plate friction clutch.

Friction clutches should be "run-in" prior to initial operation and after long periods of inactivity to remove any oxidation that may have accumulated on the friction surfaces. Repeat "run-in" instructions at the beginning of each season and when moisture and/or condensation seizes the inner friction plates.

Clutch Run-In

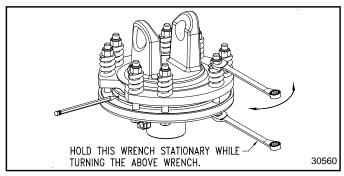
The clutch must be capable of slippage during operation to protect gearbox, driveline and other drive train parts. Friction clutches should be "run-in" prior to initial operation and after long periods of inactivity. To prevent driveline and gearbox damage, repeat clutch "run-in" at the beginning of each season and when moisture and/or condensation seizes the inner friction plates.

Section 4: Maintenance and Lubrication



Refer to Figure 4-3:

- Using a pencil or other marker scribe a line across the exposed edges of the clutch plates and friction disks.
- Carefully loosen each of the 8 spring retainer nuts by exactly 2 revolutions. It will be necessary to hold the hex end of the retainer bolt in order to count the exact number of revolutions.
- Start tractor and engage driveline for 2-3 seconds to permit slippage of clutch plate and disk surfaces. Disengage driveline and re-engage a second time for 2-3 seconds. Disengage driveline, shut off tractor and remove key. Wait for all components to stop before dismounting from tractor.



Clutch Run-In Figure 4-3

- 4. Inspect clutch and ensure that the scribed markings made on the clutch plates have changed position. Slippage has not occurred if any two marks on the friction disk and plate are still aligned. A clutch that has not slipped must be disassembled to separate the clutch plates from the friction disks. See "Clutch Disassembly" instructions below.
- 5. Tighten each of the 8 spring retainer nuts on the clutch housing exactly 2 revolutions to restore clutch to its original setting pressure.
- The clutch should be checked during the first hour of operation and periodically each week. An additional set of scribe marks can be added to check for slippage. See "Clutch Assembly" to adjust for proper spring length.

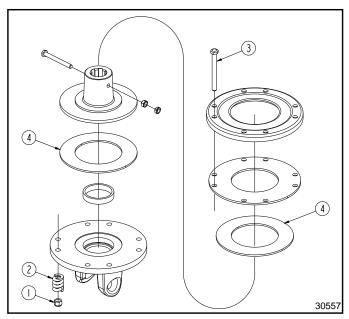
Clutch Disassembly

If the clutch run-in procedure, (See "Clutch Run-In" on page 22), indicated that one or more of the friction disks did not slip, the clutch must be disassembled to separate the friction discs.

Refer to Figure 4-4:

IMPORTANT: Be Sure to measure and record length (A") of each clutch spring before disassembling clutch.

See **IMPORTANT NOTE** above before disassembling clutch. After measuring and recording each spring length, remove spring retainer nuts (#1), springs (#2) and bolts (#3). Each friction disc (#4) must then be separated from the metal surface adjacent to it.



Clutch Disassembly Figure 4-4

Inspection

Inspect all parts for excessive wear and condition. Clean all parts that do not require replacement. The original friction disk thickness is 1/8" and should be replaced if the thickness falls below 3/32". If the clutch have been slipped to the point of "smoking", the friction disks may be damaged and should be replaced. Heat build-up may also affect the yoke joints.

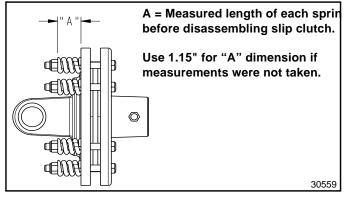
Clutch Assembly

Refer to Figure 4-4:

Reassemble each friction disk (#4) next to the metal clutch plate it was separated from. Make certain all bushing are replaced in the same location as when removed. Install bolts (#3) through end plates and intermediate plates as shown. Place springs (#2) over each bolt and secure with nuts (#1).

Refer to Figure 4-5:

Progressively tighten each spring retainer bolt until correct spring height ("A" dimension) is reached.



Clutch Adjustment Figure 4-5



Storage

Clean, inspect, service and make necessary repairs to the Rotary Tiller when parking it for long periods and when parking it at the end of a working season. This will help ensure that the tiller is ready for field use the next time you hook-up to it.



DANGER

Always disconnect main driveline from tractor PTO and secure tiller in the up position with solid supports before servicing underside of tiller. PTO can be engaged if tractor is started resulting in damage to tiller, bodily injury, or death.

- Clean off any dirt and grease that may have accumulated on the tiller and moving parts. Scrape off compacted dirt from bottom of tiller and then wash surface thoroughly with a garden hose. A coating of oil may also be applied to the areas where paint has been worn off from use to minimize oxidation.
- 2. Check tines and tine bolts for wear. Replace if necessary. Refer to "Tine Replacement" on page 22.
- 3. Inspect tiller for loose, damaged or worn parts and adjust or replace as needed.
- Repaint parts where paint is worn or scratched to prevent rust. Ask your Land Pride dealer for aerosol touch-up paint. They are also available in touch-up bottles with brush, quarts, and gallon sizes by adding TU, QT, or GL to the end of the aerosol part number.

Land Pride Touch-up Paint						
Part No.	Part Description					
821-011C 821-002C 821-054C 821-058C 821-066C	PAINT LP BEIGE SPRAY CAN PAINT LP BLACK SPRAY CAN PAINT MEDIUM RED SPRAY CAN PAINT GREEN AEROSOL SPRAY CAN PAINT LP ORANGE SPRAY CAN					

- A coating of oil may be applied to worn surfaces in lieu of painting to minimize oxidation.
- Replace all damaged or missing decals.
- Lubricate as noted in "Lubrication Points" starting on page 25.
- Drain and refill gearbox and chaincase oil. Be sure to replace all oil plugs when completed.
 - Drain oil in gearbox by removing bottom drain plug. See "Gearbox" lubrication instructions on page 26.
 - Drain oil in chaincase by removing bottom level plug and tipping tiller towards the plug hole. See "Chaincase" lubrication instructions on page 26.
- 9. Store tiller on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer tiller life.
- 10. Follow all "Parking" instructions on page 18 when disconnecting tractor from tiller.

Ordering Replacement Parts

Land Pride offers equipment in factory standard beige color with black highlights. Equipment in special colors may be purchased in Green, Red or Orange. Because of the variety of colors available, special attention must be given to the part number to prevent ordering the wrong replacement part. A suffix number corresponding to one of the colors below must be added at the end of Land Pride's part number when ordering a replacement part with that color. Parts ordered without a suffix number will be supplied in factory standard colors.

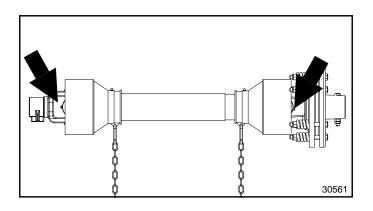
81	Green	83	.Red
82	Orange	85	. Black

For example, if you are ordering a replacement part with part number 555-555C and the existing part is red, then add the suffix 83 to the end of the number to make the part number read 555-555C83.



Lubrication Points



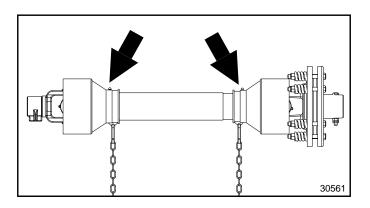




Driveline U-Joint

Type of Lubrication: Grease

Quantity = 6 pumps

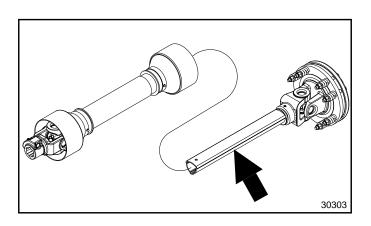




Driveline Shield Bearings

Type of Lubrication: Grease

Quantity = 6 pumps





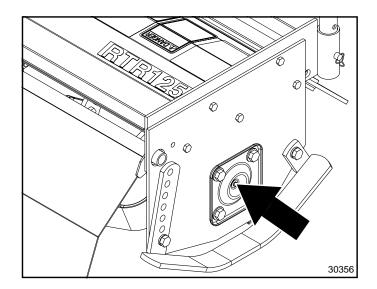
Driveline Shaft

Disconnect driveline shaft from the tractor and slide apart. Clean and coat the inner tube of the driveline shaft with a light film of grease and then reassemble.

Type of grease = Multi-Purpose

Quantity = Coat Generously



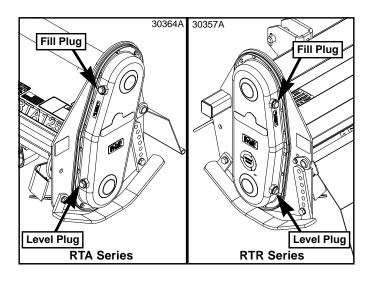




Bearing On Right End Of Rotor Shaft

Type of Lubrication: Multi-Purpose

Quantity = As Required



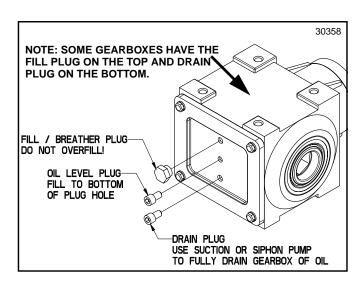


Chaincase

IMPORTANT: Tiller should be level when checking oil level in chaincase. Check oil level by removing lower level plug. Oil should reach bottom of plug hole. Remove fill plug and add recommended oil as needed. Retighten both plugs when done.

Type = Recommended: Shell Alvania EP00 Oil

Alternate: SAE 90 wt. oil Quantity = As required





Gearbox

Check oil every 50 hours of operation by removing center level plug at the rear of the gearbox, oil should come to bottom of center plug hole. Add recommended gear lube through fill plug hole until oil begins to flow out of oil level plug hole. DO NOT OVERFILL!

Retighten all plugs when done.

Type of Lubrication: SAE 80-90W EP Oil

Quantity = Fill until oil begins to flow out of oil level plug hole.

Section 5: Troubleshooting

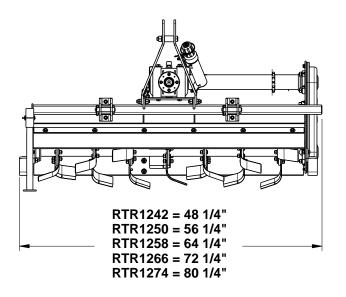


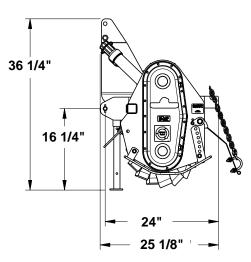
Problem	Cause	Solution			
	Tines are loose.	Tighten tines.			
Machine makes intermittent clicking noise	Gearbox has tooth damaged.	Replace damaged gearbox.			
	Roller chain is damaged.	Replace damaged chain link.			
	Universal joint is worn.	Replace universal joint.			
Driveline vibrates	Excessive trash is wrapped on rotor.	Remove trash.			
	Machine is lifted too high.	Lower machine and readjust tractor lift stop.			
	May be normal on new machine.	Allow time for break-in.			
Gearbox noise is noticeable and constant	Low oil level.	Add oil to the gearbox.			
	Worn gears.	Replace gears in the gearbox.			
Oil leaking from goarboy	Seals and/or gaskets are damaged.	Replace seals or gaskets in the gearbox.			
Oil leaking from gearbox	Gearbox is overfilled.	Drain oil to proper level.			
	PTO is not engaged.	Engage PTO.			
Rotor will not turn	Drive chain is broken.	Repair drive chain.			
	Friction clutch is slipping.	Reduce load to tiller.			
	Tiller is carried by tractor.	Lower tractor 3-Point arms.			
	Tractor has insufficient power.	Increase tractor rpm.			
	Skid Shoes need adjusting.	Adjust skid shoes.			
Tillage depth insufficient	Tines are worn or bent.	Replace tines.			
	Tines are incorrectly installed.	Check tine placement.			
	Obstacles are entangled in tines and/or rotor.	Clear rotor and/or tines of obstacles.			
	Lower hitch clevises are in the wrong position.	Relocate lower hitch clevises.			
	Leveling door is too high.	Lower leveling door.			
Soil texture too coarse	PTO speed is too slow.	Increase PTO speed.			
	Ground speed is too fast.	Decrease ground speed.			
Soil texture too fine	Leveling door is too low.	Raise leveling door.			
Soil texture too line	Ground speed is too slow.	Increase Ground Speed.			
	Tines are badly worn.	Replace worn tines.			
Machine skips or leaves crop residue	Friction clutch is slipping.	Reduce load.			
	Ground speed is too fast for conditions.	Reduce ground speed.			
	Tractor tires can compact soil causing tines	Considered as normal wear.			
Tines operating behind tractor tires show increased wear	that operate in the compacted soil to have				
	increased wear.	Replace worn tines.			
	Tines are worn or bent.	Replace tines.			
	Tines are incorrectly installed.	Install tines correctly.			
Tines balling up with soil	Rear deflector is too low.	Raise rear deflector.			
	Tractor speed is too fast.	Decrease tractor speed.			
	Soil is too wet.	Wait until soil dries.			
Tiller humping on ground	Obstacles are entangled in tines and/or rotor.	Clear rotor and/or tines.			
Tiller bumping on ground	Tines are not installed correctly.	Install tines correctly.			



RTR12 Series Rotary Tiller

Model	RTR1242	RTR1266	RTR1274						
Recommended Tractor PTO HP	15 to	35 HP	20 to	25 to 50 HP					
Weight	405 lbs.	434 lbs.	478 lbs.	497 lbs.	529 lbs.				
Tilling Width	42"	50"	58"	66"	74"				
Overall Width	48 1/4"	56 1/4"	64 1/4"	72 1/4"	80 1/4"				
3-Point Hitch Type	Ca	Category I, Adjustable Lower Hitch Clevis with Plated Pins Fits Land Pride Quick-Hitch							
Offset Capabilities		Yes, Car	not offset with Qu	iick-Hitch					
Sideshift DimensionsCentered Shifted Right Shifted Left	16" - 26" 16" - 26" 23" - 19"	25" - 25" 18" - 32" 32" - 18"	29" - 29" 22" - 36" 36" - 22"	33" - 33" 26" - 40" 40" - 26"	37" - 37" 30" - 44" 44" - 30"				
Number of Flanges on Rotor	5	6	7	8	9				
Number of Tines per Flange			4						
Tine Construction	Alloy steel heat treated "C" shaped blades								
Rotor Rotation	Reverse Rotation								
Rotor Swing Diameter	15"								
Rotor Shaft Speed	211 rpm at 540 rpm PTO								
Rotor Bearing Mounts		I	Machined cast iro	n					
Skid Shoes			Adjustable						
Storage Stands			Adjustable						
Rear Deflector		Adjustable	profile stamped re	ar deflector					
Front Deflector			Rubber						
Driveline		Cate	gory II with Slip C	lutch					
Gearbox Construction	50 HP input at 540rpm 1.92:1 ratio, Cast iron housing with ASAE 1 3/8" - 6 spline shaft, tapered roller bearings, bevel gears, drain plug, level plug & fill plug								
Lubrication		5	SAE 80-90W EP o	il					
Capacity	2 pints								
Drive Chain	#80 Roller chain - Fully enclosed in oil bath with drain & fill plugs								
Drive Chain Lubrication	Shell Alvania EP 00 or equivalent								
Sprockets	Case hardened teeth, splined bores								



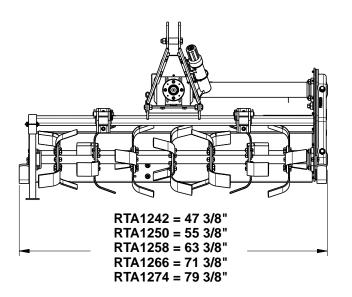


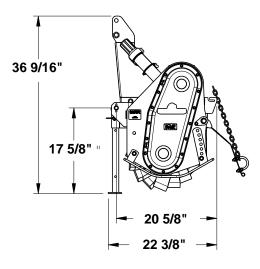
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RTA12 Series Rotary Tiller

Model	RTA1242	RTA1274					
Recommended Tractor PTO HP	15 to	35 HP	20-4	25-50 HP			
Weight	362 lbs 389 lbs. 419 lbs. 448 lbs. 480						
Tilling Width	42"	50"	58"	66"	74"		
Overall Width	47 3/8"	55 3/8"	63 3/8"	71 3/8"	79 3/8"		
3-Point Hitch Type	Category I, Adjustable Lower Hitch Clevis with Plated Pins Fits Land Pride Quick Hitch						
Sideshift Capabilities		Yes, Cannot offse	t with Quick-Hitch				
Sideshift Dimensions Centered Shifted Right Shifted Left	16" - 26" 16" - 26" 23" - 19"	25" - 25" 18" - 32" 32" - 18"	29" - 29" 22" - 36" 36" - 22"	33" - 33" 26" - 40" 40" - 26"	37" - 37" 30" - 44" 44" - 30"		
Number of Flanges on Rotor	5	6	7	8	9		
Number of Tines per Flange			4				
Tine Construction	Alloy steel heat treated "C" shaped blades						
Rotor Rotation	Forward Rotation						
Rotor Swing Diameter	15"						
Rotor Shaft Speed		211	rpm at 540 rpm F	PTO			
Rotor Bearing Mounts		ľ	Machined cast iro	า			
Skid Shoes			Adjustable				
Storage Stands			Adjustable				
Rear Deflector			profile stamped re				
Front Deflector		None (Not req	uired with RTA for	rward rotation)			
Driveline		Cate	gory II with Slip C	lutch			
Gearbox Construction	50 HP input at 540rpm 1.92:1 ratio, Cast iron housing with ASAE 1 3/8" - 6 spline shaft, tapered roller bearings, bevel gears, drain plug, level plug & fill plug						
Lubrication		S	SAE 80-90W EP o	il			
Capacity			2 pints				
Drive Chain	#80 Roller chain - Fully enclosed in oil bath with drain & fill plugs						
Drive Chain Lubrication	Shell Alvania EP 00 or equivalent						
Sprockets	Case hardened teeth, splined bores						





30365A



RTR12 Series

Features	Benefits
American made	American made means better parts availability. Many tillers are imported.
Tractor HP range 42" & 50" 58" & 60" 74"	15-35 HP 20-40 HP 25-50 HP
Reverse tilling action	Reverse action 'sucks' tiller into ground, does not walk on top of hard ground like forward rotation tillers can.
3 year Gearbox Warranty	3 Years on housing, seals, & bearings. shows our confidence in the product.
42", 50", 58", 66" & 74" Working widths	A wide range of widths are available to meet specific customer needs.
6 1/2" Digging depth	For deep soil penetration.
Bent plate steel upper hitch	Plate steel is stronger than flat bar type hitch.
Clevis lower hitch	Provides additional strength and easy one person hook-up.
Offset Capabilities	Allows tiller to work closer to objects such as fence lines, buildings and trees.
Fits Land Pride Quick-Hitch	Allows for quick and easy one person hook-up. (Offset cannot be used with Quick-Hitch.)
Adjustable parking stand	Allows for easy hook-up and storage.
Adjustable skid shoes	Control depth with seven adjustments.
Formed and reinforced rear deflector	Keeps dirt in and leaves a level finish. Forming gives deflector additional strength. Adjustable deflector allows for various finish results.
Front deflector	Front deflector is flexible to take the beating from rocks or debris.
4 'C' shaped heat-treated tines per flange	'C' Shaped tines require less HP to move through the ground.
Solid steel rotor shaft	Solid steel shaft gives rotor extra strength.
15" Rotor swing diameter	For deep tilling and turns the soil over faster.
Double lip seal on rotor bearing	Double lip seal helps keep the dirt out and the grease in.
Fully shielded slip-clutch driveline	Protects the gearbox and rotor shaft upon hitting obstructions. Slip-clutch saves having to replace shear-pins.
#80 Drive chain enclosed in oil bath	Heavy drive chain stretches less, and oil bath keeps wear to a minimum.
Stamped chain case cover	Stamped forming gives the chain cover strength.



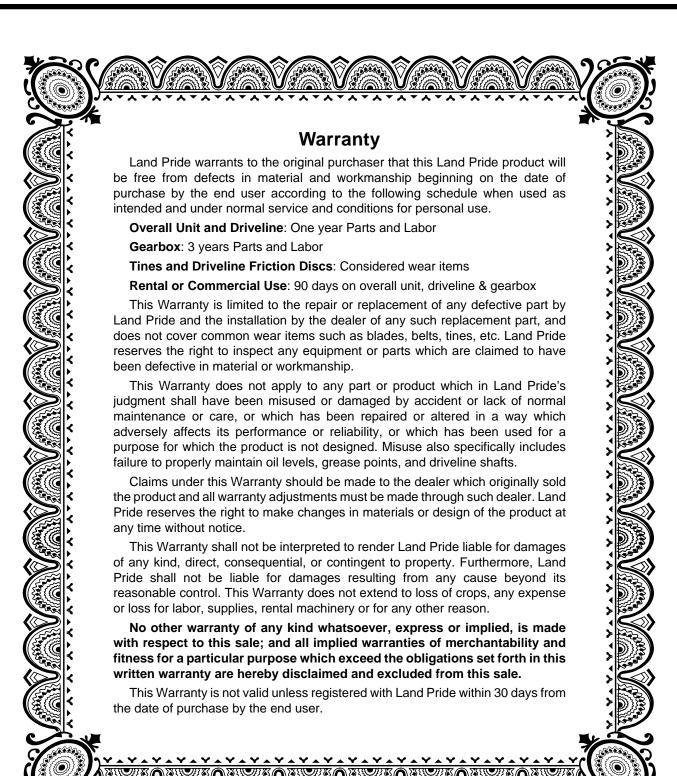
RTA12 Series

Features	Benefits
American made	American made means better parts availability. Many tillers are imported.
Tractor HP range 42" & 50" 58" & 60" 74"	15-35 HP 20-40 HP 25-50 HP
3 Year Gearbox Warranty	3 Years on housings, seals, bearings. Shows our confidence in the product.
42", 50", 58", 66" & 74" Working widths	A wide range of widths are available to meet specific customer needs.
6 1/2" Digging depth	For deep soil penetration.
Formed plate steel upper hitch	Plate steel is stronger than flat bar type hitch.
Clevis lower hitch	Provides additional strength and easy one person hook-up.
Offset Capabilities	Allows tiller to work closer to objects such as fence lines, buildings and trees.
Fits Land Pride Quick-Hitch	Allows for quick and easy one person hook-up. Does not offset to the left with Quick-Hitch.
Adjustable Parking stand	Allows for easy hook-up and storage.
Adjustable skid shoes	Control depth with various settings.
Formed and reinforced rear deflector	Forming gives deflector additional strength. Adjustable deflector allows for various finish results.
4 'C' Shaped heat-treated tines per flange	'C' Shaped tines require less HP to move through the ground.
Solid steel rotor shaft	Solid steel shaft gives rotor extra strength.
15" Rotor swing diameter	For deep tilling and turning the soil over faster.
Double lip seal on rotor bearing	Double lip seal helps keep the dirt out and the grease in.
Fully shielded slip-clutch driveline	Protects the gearbox and rotor shaft upon hitting obstructions. Slip-clutch saves having to replace shear-pins.
#80 Drive chain enclosed in oil bath	Heavy drive chain stretches less, and oil bath keeps wear to a minimum.
Stamped chain case cover	Stamped forming gives the chain cover strength.



Bolt Size (inches) Grade 2 Grade 5	Torque Values Chart for Common Bolt Sizes													
Bolt Size (Inches) Grade 2 Grade 5 Grade 6 Grade 6 Grade 7 Gr			Bolt	Head Id	lentifica	ation			Bolt Head Identification					
Bolt Size (Inches) Grade 2 Grade 5 Grade 6 Grade 6 Grade 7 Gr					へー		<i> </i>	7			\int_{10}			
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1/4" - 28	in-tpi ¹	N·m²	ft-lb ³	N · m	ft-lb	N · m	ft-lb	mm x pitch ⁴	N⋅m	ft-lb	N · m	ft-lb	N · m	ft-lb
5/16" - 18 15 11 24 17 33 25 M 8 X 1.25 17 12 26 19 36 27 5/16" - 24 17 13 26 19 37 227 M 8 X 1 18 13 28 21 39 29 3/8" - 16 27 20 42 31 59 44 M10 X 1.5 33 32 59 24 M10 X 1.5 33 24 52 39 72 55 67 49 M10 X 1.5 33 32 45 56 62 7/16" - 14 43 32 67 49 95 70 70 150 76 145 105 78 M12 X 1.5 60 44 95 70 130 97 1/2" - 13 66 49 105 76 145 105 110 210 215 M12 X 1.5 60 44 95 70 130 97	1/4" - 20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
Sinter - 24	1/4" - 28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
3/8" - 16	5/16" - 18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
3/8" - 24 31 22 47 35 67 49 M10 X 0.75 39 29 61 45 85 62 7/16" - 20 49 36 75 55 105 78 M12 X 1.75 58 42 91 67 125 93 7/16" - 20 49 36 75 55 105 78 M12 X 1.75 58 42 91 67 125 93 1/2" - 13 66 49 105 76 145 105 120 115 85 165 120 M12 X 1. 90 66 105 77 145 105 9/16" - 12 95 70 150 110 210 155 M14 X 2. 92 68 145 105 20 150 9/16" - 18 150 110 230 170 325 240 M14 X 1.5 99 73 155 115 120 440 335 245 <th>5/16" - 24</th> <th>17</th> <th>13</th> <th>26</th> <th>19</th> <th>37</th> <th>27</th> <th>M 8 X 1</th> <th>18</th> <th>13</th> <th>28</th> <th>21</th> <th>39</th> <th>29</th>	5/16" - 24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
7/16" - 14	3/8" - 16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
7/16" - 20	3/8" - 24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
1/2" - 13 66 49 105 76 145 105 1/2" - 20 75 55 115 85 165 120 9/16" - 12 95 70 150 110 210 155 9/16" - 18 105 79 165 120 235 170 5/8" - 18 150 110 230 170 325 240 5/8" - 18 150 110 230 170 325 240 3/4" - 16 260 190 405 295 570 420 7/8" - 9 225 165 585 430 820 605 7/8" - 9 225 165 585 430 820 605 7/8" - 1 237 955 705 1350 995 1" - 8 340 250 875 645 1230 910 1"-8" - 7 480 355 1080 795 1750 1290	7/16" - 14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
1/2" - 20 75 55 115 85 165 120 9/16" - 12 95 70 150 110 210 155 9/16" - 18 105 79 165 120 235 170 5/8" - 11 130 97 205 150 285 210 5/8" - 18 150 110 230 170 325 240 3/4" - 10 235 170 360 265 510 375 3/4" - 16 260 190 405 295 570 420 7/8" - 9 225 165 585 430 820 605 7/8" - 9 225 165 585 430 820 605 70 420 M18 X 1.5 220 145 310 230 450 7/8" - 9 225 165 585 430 820 605 70 420 M18 X 1.5 220 145 310 336 40 <th>7/16" - 20</th> <th>49</th> <th>36</th> <th>75</th> <th>55</th> <th>105</th> <th>78</th> <th>M12 X 1.5</th> <th>60</th> <th>44</th> <th>95</th> <th>70</th> <th>130</th> <th>97</th>	7/16" - 20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
9/16" - 12 95 70 150 110 210 155 9/16" - 18 105 79 165 120 235 170 5/8" - 11 130 97 205 150 285 210 5/8" - 18 150 110 230 170 325 240 3/4" - 10 235 170 360 265 510 375 3/4" - 16 260 190 405 295 570 420 7/8" - 9 225 165 585 430 820 605 7/8" - 9 225 165 585 430 820 605 7/8" - 9 225 165 585 430 820 605 7/8" - 14 250 185 644 475 905 670 1" - 8 340 250 875 645 1230 910 1"-1/8" - 7 480 355 1080 795 1750 12	1/2" - 13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
9/16" - 18 105 79 165 120 235 170 5/8" - 11 130 97 205 150 285 210 5/8" - 18 150 110 230 170 325 240 3/4" - 10 235 170 360 265 510 375 3/4" - 16 260 190 405 295 570 420 7/8" - 9 225 165 585 430 820 605 7/8" - 14 250 185 640 475 905 670 1" - 8 340 250 875 645 1230 910 1"-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 7 480 355 1680 1240 2730 2010 1-3/8" - 6 890 655 1990 1470 3230 2380 1-3/8" - 6 180 665 1990 1470 3680 </th <th>1/2" - 20</th> <th>75</th> <th>55</th> <th>115</th> <th>85</th> <th>165</th> <th>120</th> <th>M14 X 2</th> <th>92</th> <th>68</th> <th>145</th> <th>105</th> <th>200</th> <th>150</th>	1/2" - 20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
5/8" - 11 130 97 205 150 285 210 5/8" - 18 150 110 230 170 325 240 3/4" - 10 235 170 360 265 510 375 3/4" - 16 260 190 405 295 570 420 7/8" - 9 225 165 585 430 820 605 7/8" - 14 250 185 640 475 905 670 1" - 8 340 250 875 645 1230 910 1" - 12 370 275 955 705 1350 995 1" - 12 370 275 955 705 1350 995 1"-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 12 540 395 1210 890 1960 1440 1-3/8" - 6 890 655 1990 1470 3230	9/16" - 12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	l215	160
5/8" - 18 150 110 230 170 325 240 M18 X 2.5 195 145 310 230 405 300 3/4" - 10 235 170 360 265 510 375 M18 X 1.5 220 165 350 260 485 355 3/4" - 16 260 190 405 295 570 420 M18 X 1.5 220 165 350 260 485 355 7/8" - 9 225 165 585 430 820 605 M20 X 1.5 310 230 650 480 900 665 7/8" - 14 250 185 640 475 905 670 M24 X 3 480 355 760 560 1050 780 1" - 8 340 250 875 645 1230 910 M24 X 3 480 355 760 560 1050 780 1"-1/8" - 7 480 355 1080 <th>9/16" - 18</th> <th>105</th> <th>79</th> <th>165</th> <th>120</th> <th>235</th> <th>170</th> <th>M16 X 2</th> <th>145</th> <th>105</th> <th>225</th> <th>165</th> <th>315</th> <th>230</th>	9/16" - 18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
3/4" - 10	5/8" - 11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
3/4" - 16	5/8" - 18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
7/8" - 9 225 165 585 430 820 605 7/8" - 14 250 185 640 475 905 670 1" - 8 340 250 875 645 1230 910 1" - 12 370 275 955 705 1350 995 1-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 12 540 395 1210 890 1960 1440 1-1/4" - 7 680 500 1520 1120 2460 1820 1-3/8" - 6 890 655 1990 1470 3230 2380 1-3/8" - 12 1010 745 2270 1670 3680 2710 1-1/2" - 6 1180 870 2640 1950 4290 3160 1-1/2" - 12 1330 980 2970 2190 4820 3560 1-1/2" - 12 1330 980 2970 21	3/4" - 10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
7/8" - 14 250 185 640 475 905 670 1" - 8 340 250 875 645 1230 910 1" - 12 370 275 955 705 1350 995 1-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 7 480 395 1210 890 1960 1440 1-1/8" - 7 680 500 1520 1120 2460 1820 1-1/4" - 7 680 500 1520 1120 2460 1820 1-3/8" - 6 890 655 1990 1470 3230 2380 1-3/8" - 12 1010 745 2270 1670 3680 2710 1-1/2" - 6 1180 870 2640 1950 4290 3160 1-1/2" - 12 1330 980 2970 2190 4820 3560 Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use	3/4" - 16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
1" - 8 340 250 875 645 1230 910 1" - 12 370 275 955 705 1350 995 1-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 12 540 395 1210 890 1960 1440 1-1/4" - 7 680 500 1520 1120 2460 1820 1-1/4" - 7 680 500 1520 1120 2460 1820 1-3/8" - 6 890 655 1990 1470 3230 2380 1-3/8" - 12 1010 745 2270 1670 3680 2710 1-1/2" - 6 1180 870 2640 1950 4290 3160 1-1/2" - 12 1330 980 2970 2190 4820 3560 Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above. Additional Torque Values Chain Tightener Jam Nu	7/8" - 9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
1" - 12 370 275 955 705 1350 995 1-1/8" - 7 480 355 1080 795 1750 1290 1-1/8" - 12 540 395 1210 890 1960 1440 1-1/4" - 7 680 500 1520 1120 2460 1820 1-1/4" - 12 750 555 1680 1240 2730 2010 1-3/8" - 6 890 655 1990 1470 3230 2380 1-3/8" - 12 1010 745 2270 1670 3680 2710 1-1/2" - 6 1180 870 2640 1950 4290 3160 1-1/2" - 12 1330 980 2970 2190 4820 3560 Additional Torque Values Chain Tightener Stud Chain Tightener Jam Nut Nut N30 X 3.5 1060 705 1140 705 1400 705 1400 705 1400 705 1400 705 1400 705 1400 705 705 705 705 705 705 705	7/8" - 14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1-1/8" - 7	1" - 8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1-1/8" - 12	1" - 12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1-1/4" - 7	1-1/8" - 7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1-1/4" - 12	1-1/8" - 12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1-3/8" - 6	1-1/4" - 7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
1-3/8" - 12	1-1/4" - 12	750	555	1680	1240	2730	2010	¹ in-tpi = nomir	nal threa	d diame	ter in ind	ches-thr	eads pei	rinch
1-1/2" - 6	1-3/8" - 6	890	655	1990	1470	3230	2380			;				
1-1/2" - 12		1010	745	2270	1670	3680	2710							
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above. Additional Torque Values Chain Tightener Stud 20 to 30 ft-lbs. Chain Tightener Jam Nut 400 ft-lbs	1-1/2" - 6	1180	870	2640	1950	4290	3160		nominal	thread	diamete	r in millir	meters x	thread
Additional Torque Values Chain Tightener Stud 20 to 30 ft-lbs. Chain Tightener Jam Nut 400 ft-lbs								1'						
Chain Tightener Stud 20 to 30 ft-lbs. Chain Tightener Jam Nut 400 ft-lbs	Torque toleran	ce + 0%,	-15% o	f torquir				•		values I	isted ab	ove.		
Chain Tightener Jam Nut 400 ft-lbs					, ,	Additi	onal T	orque Value	S					
	Chain Tighten	Chain Tightener Stud 20 to 30 ft-lbs.												
Driveline Conical Dog Pin 45 to 50 ft-lbs.	Chain Tightener Jam Nut 400 ft-lbs						os .							
	Driveline Con	-						ft-lbs.						





IMPORTANT: The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

Model Number _____ Serial Number



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